

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Robert H. Getzenberg
Title: **RENAL NUCLEAR MATRIX PROTEINS, POLYNUCLEOTIDE SEQUENCES ENCODING THEM AND THEIR USES**
Appl. No.: 10/713,149
Filing Date: 11/17/2003
Examiner: Peter Reddig
Art Unit: 1642
Confirmation Number: 9439

DECLARATION UNDER 37 CFR §1.132

I, Robert H. Getzenberg, declare and say as follows:

1. I submit this declaration in support of the captioned patent application, which names me as the sole inventor.
2. Upon issuance of a patent based on the application, I will receive royalties from the assignee, University of Pittsburgh of the Commonwealth System of Higher Education, for commercialization of the patented technology.
3. I am the Director of Research of the James Buchanan Brady Urological Institute and Professor of Urology at the Johns Hopkins University School of Medicine in Baltimore, Maryland. Previously, I was the Director of Urological Research of the Department of Urology and a Co-Director of the Prostate and Urologic Cancer Center of the University of Pittsburgh Cancer Institute. I also was Professor of Urology, Pathology, and Pharmacology at the University of Pittsburgh School of Medicine. Additional information on my background appears in an appended *curriculum vitae*.
4. For some twenty years I have engaged in research in the field of proteomics, especially relating to nuclear proteins. My experience in this regard includes performing experiments and analyzing results using two-dimensional electrophoresis (2-DE). Indeed, I am one of the people who, in the late 1980's and early-90's, developed an approach that employed 2-DE for analyzing nuclear matrix proteins. I am the recipient of numerous grants for funding of 2-DE research, and I teach courses for the American Urological Association on protein analysis, including using 2-DE. Peer-reviewed reports of my research employing 2-DE have appeared in numerous


publications, and I have reviewed and commented on other researchers' publications in this area.

5. 2-DE is a method for separating different proteins by their molecular weight and isoelectric points. In operation, a sample of proteins, usually placed in a gel, is subjected to separation in a first dimension by isoelectric point and then, in a second dimension, by molecular weight. By virtue of this separation in two dimensions sequentially, individual proteins are isolated more readily. In addition, the relative positions of the resulting protein spots in regards to the isoelectric point and molecular weight are characteristic of the protein.
6. A person familiar with and having technical knowledge of 2-DE would recognize that this method necessarily generates slight variability in its results. This variability is attributed in the field to a variety of factors, including post-translational changes in proteins, such as glycosylation and phosphorylation, and to varying experimental conditions, e.g., in buffer pH and gel constituency. These factors cause slight differences in the location of any given protein after 2-DE is performed.
7. Even with the variations described above, the feasibility of using 2-DE for identifying a protein has been well documented. Accordingly, a person familiar with and having technical knowledge of 2-DE would appreciate that this method can be used not only to separate proteins but also to identify them. A representative article in this regard describes GELBANK, a database of 2-DE gel patterns for proteomic analysis. Babnigg *et al.*, *Nucleic Acids Research* (2004) 32: D582-D585 (Exhibit 1), and states that GELBANK is set up such that proteins can be searched by molecular weight and isoelectric point range. Page D583, last paragraph in left column.
8. Protein identification in 2-DE can be performed reliably because a person familiar with and having technical knowledge of 2-DE would recognize whether the variability in a given instance is significant or insignificant. That is, if variability between protein locations in separate gels is significant, then the gels are displaying separate proteins; conversely, variability that is insignificant means that the gels are displaying the same proteins.
9. One widely accepted method for determining whether such variability is significant or insignificant is a process known as triangulation. This method employs known surround spots as landmarks, to determine if differences in gel conditions resulted in shifting of a protein spot of interest. By referencing the surround spots and their

relative positions against the protein spot of interest, one can obtain a reasonable estimate of whether a change in spot location between gels is significant or insignificant and therefore identify the protein in the spot. A representative article on triangulation, using landmarks to match protein spots between gels using landmarks, is Hoffman *et al. in*: PROCEEDINGS OF THE FOURTEENTH ANNUAL SYMPOSIUM ON COMPUTATIONAL GEOMETRY (1998) 231-239 (Exhibit 2). Another method to this end utilizes computational geometry not based on landmarks to compare different gels. A representative article on this method is Efrat *et al. in*: PROCEEDINGS OF THE FIFTH ANNUAL INTERNATIONAL CONFERENCE ON COMPUTATIONAL BIOLOGY (2001) 114-123 (Exhibit 3). Via either of these methods, a person familiar with and having knowledge of 2-DE would be able to use 2-DE to identify proteins reliably, even where the location of proteins may be insignificantly shifted between gels.

10. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful, false statements and the like so made are punishable by fine or imprisonment or both, under Section 1001 of Title XVIII of the United States Code and that such willful, false statements may jeopardize the validity of the above-identified application or any patent resulting from that application.

By


Robert H. Getzenberg

Date:


December 11, 2007

**CURRICULUM VITAE
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EDUCATION AND TRAINING

UNDERGRADUATE:

<i>Dates Attended</i>	<i>Name and Location of Institution</i>	<i>Degree Received and Year</i>	<i>Major Subject</i>
1983 – 1987	Rutgers College, Rutgers University New Brunswick, New Jersey	B.A. w/ High Honors 1987	Microbiology

GRADUATE:

<i>Dates Attended</i>	<i>Name and Location of Institution</i>	<i>Degree Received and Year</i>	<i>Major Professor and Discipline</i>
1987-1992	Johns Hopkins University School of Medicine, Baltimore, Maryland	Ph.D. – 1992	Donald S. Coffey, Ph.D. Biochemistry, Cellular & Molecular Biology

POST-GRADUATE:

<i>Dates Attended</i>	<i>Name and Location of Institution</i>	<i>Name of Program Director and Discipline</i>
1992-1994	Yale University School of Medicine New Haven, Connecticut	Eric R. Fearon, M.D., Ph.D. Postdoctoral Fellowship Department of Pathology

PROFESSIONAL EXPERIENCE

ACADEMIC:

<i>Years Inclusive</i>	<i>Name and Location of Institution or Organization</i>	<i>Title</i>
1994 – 1999	Department of Pathology University of Pittsburgh School of Medicine Pittsburgh, Pennsylvania	Assistant Professor
1995 – 1997	Department of Surgery University of Pittsburgh School of Medicine Pittsburgh, Pennsylvania	Assistant Professor
1995 – 1999	Department of Medicine University of Pittsburgh School of Medicine Pittsburgh, Pennsylvania	Assistant Professor
1995 – 1999	Department of Pharmacology University of Pittsburgh School of Medicine Pittsburgh, Pennsylvania	Assistant Professor
1997 – 1998	Cellular and Molecular Pathology Graduate Program University of Pittsburgh School of Medicine	Member, Executive Steering Committee
1994 – 2004	Prostate and Urologic Cancer Program University of Pittsburgh Cancer Institute	Member
1995 – 2004	Graduate Faculty University of Pittsburgh School of Medicine	Member
1996 – 2004	Cellular and Molecular Pharmacology Graduate Program University of Pittsburgh School of Medicine	Member
1997 – 2004	Prostate and Urologic Cancer Center University of Pittsburgh Cancer Institute	Director of Research and Co-Director
1998 – 2004	Cellular and Molecular Pathology Graduate Program University of Pittsburgh School of Medicine	Associate Director
1999 - 2003	UPCI Planning and Budget Committee University of Pittsburgh Cancer Institute	Member

2000 – 2003	Department of Urology University of Pittsburgh School of Medicine Pittsburgh, Pennsylvania	Associate Professor w/tenure and Director of Urological Research
1999 – 2003	Department of Pathology University of Pittsburgh School of Medicine Pittsburgh, Pennsylvania	Associate Professor w/tenure
1999 – 2003	Department of Pharmacology University of Pittsburgh School of Medicine Pittsburgh, Pennsylvania	Associate Professor w/tenure
2003 – 2004	Department of Urology University of Pittsburgh School of Medicine Pittsburgh, Pennsylvania	Professor w/tenure and Director of Urological Research
2003 – 2004	Department of Pathology University of Pittsburgh School of Medicine Pittsburgh, Pennsylvania	Professor w/tenure
2003 – 2004	Department of Pharmacology University of Pittsburgh School of Medicine Pittsburgh, Pennsylvania	Professor w/tenure
2005 - Present	Department of Urology The Johns Hopkins University School of Medicine	Professor
2005 - Present	Brady Urological Institute The Johns Hopkins Hospital	Director of Research
2005 – Present	Department of Oncology The Johns Hopkins University School of Medicine	Professor
2005 – Present	Department of Pharmacology & Molecular Sciences The Johns Hopkins University School of Medicine	Professor
2005 – Present	Sidney Kimmel Comprehensive Cancer Centre The Johns Hopkins University School of Medicine	Member
2006	The Donald S. Coffey Professor of Urology of the James Buchanan Brady Urological Institute The Johns Hopkins University School of Medicine	Professor

PUBLICATIONS

1. Refereed articles.

1. Nath, P., Getzenberg, R.H., Beebe, D., Pallansch, L. and Zelenka, P. c-myc mRNA is Elevated as Differentiating Lens Cells Withdraw From the Cell Cycle. *Experimental Cell Research* 169; 215-222, 1988.

2. **Getzenberg, R.H.** and Coffey, D.S. Tissue Specificity of the Hormonal Response in Sex Accessory Tissues is Associated with Nuclear Matrix Protein Patterns. *Molecular Endocrinology*, *4*(9):1336-1342, 1990.
3. **Getzenberg, R.H.**, Pienta, K.J. and Coffey, D.S. Related Articles, Links The tissue matrix: cell dynamics and hormone action. *Endocr. Rev.* *11*(3); 399-417, 1990
4. Boyd, J., Pienta, K.J., **Getzenberg, R.H.**, Coffey, D.S. and Barrett, J.C. Preneoplastic Alterations in Nuclear Morphology that Accompany Loss of the Tumor Suppressor Phenotype. *Journal of the National Cancer Institute*. *83*(12):862-866, 1991.
5. Pienta, K.J., Murphy, B.C., **Getzenberg, R.H.** and Coffey, D.S. The Effect of Extracellular Matrix Interactions on Morphologic Transformation *in vitro*. *Biochemical and Biophysical Research Communications*, *179*(1):333-339, 1991.
6. **Getzenberg, R.H.**, Pienta, K.J., Huang, E.Y.W., Murphy, B.C. and Coffey, D.S. Modifications of the Intermediate Filament and Nuclear Matrix Networks by the Extracellular Matrix. *Biochemical and Biophysical Research Communications*, *179*(1):340-344, 1991.
7. **Getzenberg, R.H.**, Pienta, K.J., Huang, E.Y.W. and Coffey, D.S. Identification of Nuclear Matrix Proteins in the Cancer and Normal Rat Prostate. *Cancer Research*, *51*(24):6514-6520, 1991.
8. **Getzenberg, R.H.**, Pienta, K.J., Ward, W.S. and Coffey, D.S. Nuclear Structure and the Three-Dimensional Organization of DNA. *Journal of Cellular Biochemistry*, *47*:289-299, 1991.
9. Pienta, K.J., **Getzenberg, R.H.** and Coffey, D.S. Characterization of Nuclear Morphology and Nuclear Matrices in Ageing Human Fibroblasts. *Mechanisms of Ageing and Development*, *62*:13-24, 1992.
10. Partin, A.W., **Getzenberg, R.H.**, CarMichael, M.J., Vindivich, D., Yoo, J., Epstein, J.I., and Coffey, D.S. Nuclear Matrix Protein Patterns in Human Benign Prostatic Hyperplasia and Prostate Cancer. *Cancer Research*, *53*(4):744-746, 1993.
11. **Getzenberg, R.H.** The Nuclear Matrix and the Regulation of Gene Expression: Tissue Specificity. *J. Cell. Biochem.*, *55*(1):22-31, 1994.
12. Pierceall, W.E., Cho, K.R., **Getzenberg, R.H.**, Reale, M.A., Hedrick, L., Vogelstein, B., and Fearon, E.R. NIH3T3 Cells Expressing the Deleted in Colorectal Cancer Gene Product Stimulate Neurite Outgrowth in Rat PC12 Pheochromocytoma Cells. *J. Cell Biol.*, *124*(6):1017-1027, 1994.
13. Reale, M.A., Hu, G., Zafar, A.I., **Getzenberg, R.H.**, Levine, S.M., and Fearon, E.R. Expression and Alternative Splicing of the Deleted in Colorectal Cancer (DCC) Gene in Normal and Malignant Tissues. *Cancer Research*, *54*(16):4493-4501, 1994.
14. Osborn, J.L., **Getzenberg, R.H.**, and Trump, D.L. Spinal Cord Compression in Prostate Cancer. *J. Neuro-Onc.*, *23*(2):135-147, 1995.
15. Nardoza, T.A., Quigley, M.M., and **Getzenberg, R.H.** Association of Transcription Factors with the Nuclear Matrix. *Journal of Cellular Biochemistry*, *61*(3):467-477, 1996.
16. **Getzenberg, R.H.**, Konety, B.R., Oeler, T.A., Quigley, M.M., Hakam, A., Becich, M.J., and Bahnson, R.R. Bladder Cancer Associated Nuclear Matrix Proteins. *Cancer Research*, *56*:1690-1694, 1996.

17. Replogle-Schwab, T.S., **Getzenberg, R.H.**, Donat, T.L., and Pienta, K.J. The Effect of Organ Site of Nuclear Matrix Protein Composition. *Journal of Cellular Biochemistry*, 62(1), 132-141, 1996.
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20. **Getzenberg, R.H.**, Light, B.W., Lapco, P.E., Konety, B.R., Nangia, A.K., Acierno, J.S., Dhir, R., Shurin, Z., Day, R.S., Trump, D.L., and Johnson, C.S. Vitamin D Inhibition of Prostate Adenocarcinoma Growth and Metastasis in the Dunning Rat Prostate Model System. *Urology*, 50(6), 999-1006, 1997.
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27. Krill, D., Stoner, J., Konety, B.R., Becich, M.J., and **Getzenberg, R.H.** Differential Effects of Vitamin D on Normal Human Prostatic Epithelial and Stromal Cells in Primary Culture. *Urology*, 54(1) 171-177, 1999.
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37. Krill, D., DeFlavia, P., Dhir, R., Luo, J., Leman, E. Becich, M.J., and **Getzenberg, R.H.** Expression Patterns of Vitamin D Receptor in Human Prostate. *Journal of Cellular Biochemistry* 82: 566-572 2001.
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40. Konety, B.R., Somogyi, G., Atan, A., Muindi, J., Chancellor, M.B., and **Getzenberg, R.H.** Evaluation of Intra-Prostatic Metabolism of 1,25 Dihydroxyvitamin D₃ (Calcitriol) Using a Microdialysis Technique. *Urology*, 59:947-952, 2002.
41. Davido, H. T. and **Getzenberg, R.H.** Utilization of a Urine-Based Assay for BLCA-4 in the Detection of Bladder Cancer. *Journal of Clinical Ligand Assay*, 25:85-86, 2002.
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48. Leman, E.S., Madigan, M.C., Brunagel, G., Takaha, N., Coffey, D.S. and **Getzenberg, R.H.** Nuclear Matrix Localization of High Mobility Group Protein I (Y) in a Transgenic Mouse Model for Prostate Cancer. *Journal of Cellular Biochemistry*, 88:599-608, 2003.
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50. Leman, E.S., Arlotti, J.A., Dhir, R., and **Getzenberg, R.H.** Vitamin D and Androgen Regulation of Prostatic Growth. *Journal of Cellular Biochemistry*, 90: 138-147, 2003.
51. Sakamoto, S., Yokoyama, M., Prakash, K., Tsuruha, J.-I., Masamoto, S., **Getzenberg, R.H.** and Kakehi, Y. Development of Quantitative Detection Assays for CYR61 as a New Marker for Benign Prostatic Hyperplasia. *Journal of Biomolecular Screening*, 8: No: 6: 701-711, 2003.
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55. Guzey, M., Arlotti, J., Acquafondata, M., Jukic, D., Dhir, R., and **Getzenberg, R.H.** Increased Apoptosis of Periprostatic Adipose Tissue in VDR Null Mice. *Journal of Cellular Biochemistry*, *Journal of Cellular Biochemistry*, 93: 133- 141, 2004.
56. Guzey, M., Luo J. and **Getzenberg, R.H.** Vitamin D₃ Modulated Gene Expression Patterns in Primary Prostate Normal and Cancer Cells. *Journal of Cellular Biochemistry*, 93:271-285, 2004.
57. Shah, U.S., and **Getzenberg, R.H.** Fingerprinting the Diseased Prostate: Association Between BPH and Prostate Cancer. *Journal of Cellular Biochemistry*, 91:161-169, 2004.
58. Brunagel, G., Schoen, R.E., and **Getzenberg, R.H.** Colon Cancer Specific Nuclear Matrix Protein

- Alterations in Human Colonic Adenomatous Polyps. *Journal of Cellular Biochemistry*, 91: 365-374, 2004.
59. Van Le, T-S.T., Myers, J., Konety, B.R., Barder, T., and **Getzenberg, R.H.** Functional Characterization of the Bladder Cancer Marker, BLCA-4. *Clinical Cancer Research*, 10: 1384-1391, 2004.
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2. Books, Chapters and Reviews.

1. **Getzenberg, R.H.**, and Coffey, D.S. Tissue Specificity and Cell Death are Associated with Specific Alterations in Nuclear Matrix Proteins, In: Karr, J.P., Tindall, D.J., Coffey, D.S., and Smith, R.G. (eds) *Molecular and Cellular Biology of Prostate Cancer*, Plenum Press, New York, pg 1-13, 1989.
2. **Getzenberg, R.H.**, Pienta, K.J. and Coffey, D.S. The Tissue Matrix: Cell Dynamics and Hormone Action. *Endocrine Reviews*, 11(3): 399-417, 1990.
3. Pienta, K.J., **Getzenberg, R.H.** and Coffey, D.S. Cell Structure and DNA Organization. *Critical Reviews in Eukaryotic Gene Expression*, 1(4):355-385, 1991.
4. Pienta, K.J., Murphy, B.C., **Getzenberg, R.H.**, and Coffey, D.S. The Tissue Matrix and the Regulation of Gene Expression in Cancer Cells. *Advances in Molecular and Cellular Biology*, 7:131-156, 1993.
5. **Getzenberg, R.H.** Book Review of *Essential Endocrinology*. *The Physiologist*, 409, 1996.
6. Replogle-Schwab, T.S., Pienta, K.J., and **Getzenberg, R.H.** The Utilization of Nuclear Matrix Proteins for Cancer Diagnosis. *Critical Reviews in Eukaryotic Gene Expression*, 6(1&2):103-113, 1996.
7. **Getzenberg, R.H.** The Tissue Matrix: Cell Signaling and Hormone Regulation. In: Bittar, E.E. and Bittar, N. (eds) *Principles of Medical Biology*, JAI Press, Inc., Greenwich, CT, 10B:643-662, 1997.
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9. Horton, M.J. and **Getzenberg, R.H.** The Role of the Nuclear Matrix in Tissue Specific Gene Expression. In: **Getzenberg, R.H.** (ed.) *Cell Structure and Signalling*, JAI Press Inc., Greenwich, CT, 185-206, 1997.
10. **Getzenberg, R.H.** Telomerase, Aging and Cancer. *AUA News*, 2(4):10, 1997.
11. **Getzenberg, R.H.** Vitamin D and Normal Prostate Growth and Differentiation. *Nutrition Report*, 15(4):25,32, 1997.

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13. Konety, B.R., Johnson, C.S., Trump, D.L., **Getzenberg, R.H.** Vitamin D in the Prevention and Treatment of Prostate Cancer. *Seminars in Urologic Oncology*, 17:77-84, 1999.
14. **Getzenberg, R.H.**, Reviewer - Unweaving the Rainbow: Science, Delusion, and the Appetite for Wonder, Author, Richard Dawkins. *Oncology Times*, 1999.
15. Davido, T., and **Getzenberg, R.H.** Nuclear Matrix as Cancer Markers. *Journal of Cellular Biochemistry*, 999:35: 136-141, 2000.
16. **Getzenberg, R.H.** The Nuclear Matrix and Cytoskeleton. The Role of the Nuclear Matrix and Cytoskeleton in Cancer, In: Chung, L. W. K., Isaacs, W. B. and Simons, J. W. (eds) *Prostate Cancer: Biology, Genetics, and the New Therapeutics*. Humana Press, Totowa, NJ, 2000.
17. Konety, B.R. and **Getzenberg, R.H.** Urine Based Markers of Urological Malignancy. *Journal of Urology*, 165: 600-611, 2001.
18. **Getzenberg, R.H.** Urine-Based Assays for Bladder Cancer. *Laboratory Medicine*, 34: (8) 613-617, 2003.
19. Roy-Burman, P., Tindal, D.J. Robins, D.M., Greenberg, N.M., Hendrix, M.J.C., Mohla, S. **Getzenberg, R.H.**, Isaacs, J.T., Pienta, K.J. Androgens and Prostate Cancer: Are the Descriptors Valid? *Cancer Biology and Therapy*. *Cancer Biology & Therapy* 4: (1) 4-5, 2005.
20. **Getzenberg, R.H.**, Abrahamsson, P.A., Canto, E.I., Chinnaiyan, a.M., Djavan, B., Laxman, B., Ogawa, O., Slawin, K., Tomlins, S.A., and Yu, J. Advances in Biomarkers for Prostate Diseases. *Prostate Cancer* (eds) McConnell, J., Denis, L., Akaza, H., Khoury, S. and Schalken, J. Health Publications -2006.
21. Lokeshwar, V.B. and **Getzenberg, R.H.** Voided Urine Markers 20. Lerner, S.P., Schoenberg, M., Sternberg, C. (Eds): *Textbook of Bladder Cancer*. London: T& F-Infoma, 2005 (in Press),
22. Leman, E., and **Getzenberg, R.H.** Therapeutic Strategies in Prostate Cancer: The Current State of Biomarkers for Prostate Cancer. *Clinical Publishing*, Oxford, UK (Submitted 2006)

INVENTIONS, PATENTS, COPYRIGHTS (Pending, Awarded): Title/Date

Patent Applications

Partin, A.W., Getzenberg, R.H., and Coffey, D.S., "Nuclear Matrix Proteins", U.S. Serial No. 08/015,624, 1993 (Awarded 9/97).

Getzenberg, R.H., "Nuclear Matrix Proteins, Polynucleotide Sequences Encoding Them, and Their Use", U.S. Serial No. 09/418,839, 1999 (Pending).

Getzenberg, R.H. and Bahnson, R.R., "Bladder Cancer Nuclear Matrix Proteins", 1995. U.S. Patent Number 5,866,535 (Awarded 2/99).

Getzenberg, R.H., "Renal Nuclear Matrix Proteins and Their Use", 1997. U.S. Patent Number 6,232,443 (Awarded 5/01).

Munger, W.E., Kulkarni, P., and Getzenberg, R.H., GeneLogic – "Identification of cDNAs Associated with Benign Prostatic Hyperplasia", 2000 (Pending).

Getzenberg, R.H., Bauer, A.J., Schoen, R.E., Bruenagel, G., "Colonic Nuclear Proteins, Polynucleotide Sequences, Encoding Them and Their Use", 2001 (Pending)

RESEARCH GRANT PARTICIPATION

ACTIVE SUPPORT

N01-CN-35153 (Bailey, H.)	08/01/04-07/31/05	1%
NIH/NCI	\$5,037	
(Sub-Contract with University of Wisconsin)		
Phase II Study of Isoflavone PTI G-2535 (Genistein) in Patients with Bladder Cancer		

FAMRI (Getzenberg)	07/01/05 – 06/30/07	10%
A Marker for Bladder Cancer in Involuntary Smokers		
\$100,000		
The effect of smoking alone on BLCA-4 levels will be assessed by comparing urine-BLCA-4 levels in healthy nonsmokers with BLCA-4 levels in healthy smokers. Data obtained from healthy volunteers will provide additional evidence of specificity for the BLCA-4 assay. BLCA-4 levels will be measured using a BLCA-4 sandwich immunoassay while smoke exposure history will be evaluated by questionnaire. If successful, the pilot study could eventually lead to the use of this clinical assay to identify voluntary and involuntary smokers in the preliminary stages of bladder cancer, thereby allowing for the early and aggressive treatment of the disease.		

There is no scientific overlap with the current application.

2 R01 CA082522 (Getzenberg)	05/22/00 – 04/30/06	20%
NIH	\$115,847	

Characterization of the Bladder Cancer NMP, BLCA-4

In this application, we hypothesize that BLCA-4 is a bladder cancer associated nuclear matrix protein that may play a role in bladder cancer pathobiology. In order to address this hypothesis, we propose the following specific aims: 1) to clone the cDNA encoding BLCA-4. Utilizing degenerate oligonucleotides, which encode the peptide sequences that we have obtained, we will identify and clone the cDNA utilizing PCR amplification of a bladder cancer cDNA population as well as by screening a λ gt11 library that we have produced. As an alternative strategy, the antibodies that we have produced will be utilized in this DNA screening; 2) to begin to elucidate the role of this protein in cancer pathobiology by altering expression levels by both coding and antisense vectors and by examining the protein localization, DNA binding capability and post-translational modification of BLCA-4; and 3) to analyze the expression of BLCA-4 in bladder cancer progression utilizing human samples and a rat model. BLCA-4 appears to be a novel, tumor specific marker for bladder cancer that may be utilized to identify individuals that have the disease.

There is no scientific overlap with the current application.

NIH- U01 CA084968-06 (Bigbee)	09/30/04 – 08/31/09	10%
Early Detection Research Network Biomarker	\$924,414	
Developmental Laboratories [EDRN]		

Project 1 will further characterize, evaluate, and validate a set of unique nuclear matrix proteins (NMPs) which are expressed in CRC. In preliminary data, the lead NMP biomarker, CC2, is elevated in the serum of CRC patients. A key objective of this Project is to undertake a more extensive Phase ½ validation study to assess the performance of this biomarker for serum-based early detection of CRC. Other NMPs in our development pipeline, with a varying spectrum of expression in pre-malignant (adenomas) and malignant tissue, will further characterized and evaluated as potential biomarkers of early disease and/or risk.

There is no scientific overlap with the current application.

NIH – U01 DK063593 (Getzenberg)	10/01/02 – 09/30/05	25%
MTOPS Biomarker Unit at the University of Pittsburgh	\$448,125	

This hypothesis will be addressed by conducting the following specific aims: 1) to analyze the expression of JM-27, BMP-5 (list other markers) as well as other markers in biopsy samples obtained from the MTOPS trial as well as normal and BPH (symptomatic and asymptomatic) tissues in our bank and to correlate the above-described markers with both response to therapy and symptom progression; 2) to develop serum-based methodologies for testing the expression of the above-described markers in patient samples obtained from the MTOPS trial as well as from normal and BPH (symptomatic and asymptomatic) individuals from our Institution; and 3) to further develop a system by which other markers developed and prioritized by the MTOPS Consortium can be analyzed. As a component of the MTOPS Consortium, these studies should provide the development of novel biomarkers with utility in diagnosing and characterizing BPH.

There is no scientific overlap with the current application.

NIH – R01 CA096105 (Getzenberg)	06/01/03 – 03/31/06	10%
Specific Biomarkers in Bladder Cancer Prevention	\$326,641	

We propose to: (1) To examine the time course of BLCA-4 expression in the development of bladder cancer utilizing an animal model of the disease representing former smokers; 2) To determine the utility of BLCA-4 as a surrogate marker of bladder cancer permitting the rapid evaluation of chemopreventive compounds; 3) To test in a pilot study, the use of BLCA-4 as a biomarker with which to detect bladder cancer in former smokers at an early stage, prior to the development of gross lesions; therefore making them candidates for chemopreventive therapies both intravesically as well as systemic

There is no scientific overlap with the current application

1 P01 HD139768		
Project 3 (Getzenberg) – Overall (Chancellor)	08/22/01 – 06/30/06	10%
NIH	\$106,531	

Collaborative Urologic Research in Spinal Cord Injury – Project 3 – Biomarkers of Bladder Cancer in SCI Individuals (Sub-Contract with University of Pittsburgh)

Patients with spinal cord injuries are known to have a significantly increased risk (over 400 fold) for developing bladder tumors. Unfortunately, bladder cancer in these patients often presents late, at an aggressive stage typically indicating a poor prognosis. The early diagnosis of bladder cancer is central to the effective treatment of the disease. We hypothesize that our newly identified bladder cancer specific marker will be able to identify SCI individuals with bladder cancer and will serve as a diagnostic marker for identification of individuals with this disease. In addition, these biomarkers will provide us with significant novel information about the pathobiology of bladder cancer in individuals with spinal cord injuries. The markers to be studied are: 1) BLCA-4 assay – a bladder cancer specific nuclear matrix protein present in elevated levels in the urine of patients with bladder cancer; 2) The BTA assay – a urine based test to detect presence of a marker derived from the basement membrane of bladder cancer cells a tumor antigen reported to be a member of the complement H factor family and 3) NMP22 – a urine based test which detects elevated levels of a generic nuclear matrix protein in patients with bladder cancer. These tests will also be compared to routine voided urine cytology, which is the standard diagnostic test currently used to

screen and detect bladder cancer in these patients. Cystoscopy and biopsy of visible lesions will be the definitive method of diagnosis of bladder cancer. Such a comparative analysis will allow us to determine the optimal and most effective test, which can be used to screen and monitor spinal cord injured patients for bladder cancer.

There is no scientific overlap with the current application.

Sponsored Research Agreement (Getzenberg)	03/01/02 – 06/30/06	0%
Tessera Diagnostics, Inc.	\$240,000	

ACTIVE SUPPORT (pending transfer approval to Johns Hopkins University)

R13 CA/DK97015-01 (Getzenberg)	10/01/02 – 10/31/06	0%
Prostate Neck Cancer Meetings	\$213,389	

The goals of this conference will be to: (1) to define the challenges and opportunities for prostate cancer research; (2) to encourage young and established investigators to focus their research endeavors on prostate cancer by defining high priority, unresolved basic and clinical issues and discussing approaches of investigation; (3) encourage multidisciplinary analysis of current data relevant to the biology, prevention and management of prostate cancer; (4) to identify research opportunities, approaches and resources needed to develop new preventative, diagnostic and treatment approaches for prostate cancer;

(5) to promote research and encourage collaborative studies which will focus diversified expertise and resources on priority topics relevant to prostate cancer; and (6) to publish a summary of the conference in an appropriate journal.

There is no scientific overlap with the current application.

PENDING SUPPORT

NIH – R01 DK069401 (Getzenberg)	12/01/04 – 11/30/09	25%
Characterization of a Stromal Specific Marker of BPH	\$332,598	

We propose to: (1) To comprehensively analyze the tissue expression of JM-27 including normal and developing prostatic tissues, prostate cancer as well as BPH (symptomatic and asymptomatic); (2) To examine the effects of overexpression and inhibiting expression of JM-27 in prostatic cell models; and (3) To begin to elucidate the function of JM-27 by determining its cellular localization, proteins with which it interacts, phosphorylation and glycosylation as well as changes in expression observed in co-culture systems.

There is no scientific overlap with the current application.

NIH – 2R01CA082522 (Getzenberg)	04/01/06-11/30/10	15%
Characterization of the Bladder Cancer NMP, BLCA-4	\$250,000	

The overall goal of this project is to: 1) To examine the time course of BLCA-4 expression in the development of bladder cancer utilizing an animal model of the disease; 2) To test if BLCA-4 expression is altered in patients treated by surgery or intravesicular therapies for this disease looking both in evaluating therapeutic modalities; 3) To determine if BLCA-4 is able to be detected in the serum of patients with metastatic bladder cancer and is able to separate them from individuals with localized bladder cancer; and 4) To further elucidate the role of this protein in cancer pathobiology by altering expression levels using both coding and antisense vectors and by examining protein localization, DNA binding capability and post-translational modification of BLCA-4

There is no scientific overlap with the current application.

NIH -R01 CA116534-01- (Getzenberg)

07/01/05 - /6/30/10

25%

Analysis of the Novel Bladder Tumor Marker, BLCA-1

\$1,224,942

The overall goal of this project is to: 1) To optimize and validate the urine-based assay for BLCA-1 and to determine the characteristics of this assay as a tool to diagnose bladder cancer alone and in combination with the BLCA-4 assay; 2) To clone the cDNA encoding BLCA-1. Utilizing degenerate oligonucleotides primers which encode the peptide sequences that we have obtained, we will identify and clone the cDNA utilizing PCR amplification of a bladder cancer cDNA population. As an alternative strategy, the antibodies that we have produced will be utilized in this DNA screening; and 3) To begin to elucidate the role of this protein in cancer pathobiology by altering expression levels using both coding and antisense vectors and by examining protein localization, DNA binding capability and post-translational modification of BLCA-1.

There is no scientific overlap with the current application

Previous

1995 – 1997 “Shannon Award”

1 R55 CA/OD65463

NIH

\$50,000

Robert H. Getzenberg, Ph.D.

Principal Investigator - ____%

1996 – 1997 “Evaluation of Nuclear Matrix Protein Markers in Renal Cell Carcinoma”

National Kidney Foundation of W. Penn

\$20,000

Robert H. Getzenberg, Ph.D.

Principal Investigator - ____%

1996 – 1997 “Bladder Cancer Associated Nuclear Matrix Alterations”

Comp. Medical Research Fund

\$25,000

Robert H. Getzenberg, Ph.D.

Principal Investigator - ____%

1996 – 1997 “The Clinical Utility of Renal Cell Carcinoma Associated Nuclear Matrix Proteins”

National Kidney Cancer Assoc.

\$30,000

Robert H. Getzenberg, Ph.D.

Principal Investigator - ____%

1996 – 1997 “Sponsored Research Agreement”

Matritech

\$100,000

Robert H. Getzenberg, Ph.D.

Principal Investigator - ____%

1997 – 2000 “Demeter Bio Technologies Ltd.”

Demeter

\$280,000

Principal Investigator - ____%

1998 – 2000 “Spinal Cord Injury and Bladder Cancer Detection”

1 R03 HD35878

NIH

\$150,500

Robert H. Getzenberg, Ph.D.

Principal Investigator – 10%

1998 – 2000 “The Study of LY353381 in Prostate Cancer”

Lilly and Company

\$8,140

Robert H. Getzenberg, Ph.D.

Principal Investigator - ____%

1996 – 2001 “Prostate Cancer Associated Nuclear Matrix Alterations”

1 R29 CA65463

NIH

\$528,299

Robert H. Getzenberg, Ph.D.

Principal Investigator – 25%

1999 – 2002 “Sponsored Research Agreement”

TAP Pharmaceuticals

\$128,565

Robert H. Getzenberg, Ph.D.

Principal Investigator - ____%

1999 – 2002 “Sponsored Research Agreement”

GeneLogic

\$923,624

Robert H. Getzenberg, Ph.D.

Principal Investigator - ____%

TEACHING

1994 “The Role of Nuclear Structure in Gene Regulation and Cancer”
Medical Oncology Grand Rounds, University of Pittsburgh Medical Center
Pittsburgh, PA

1994 “The Role of the Nuclear Matrix in Prostate Cancer”
Urology Grand Rounds, University of Pittsburgh Medical Center, Pittsburgh, PA

1994–Present Organized bi-monthly research conference for investigators, fellows and students with
interests in prostate and GU cancers.

- 1994–Present Cancer Research and the Pittsburgh Cancer Institute
Presented a weekly orientation for local High School students sponsored by the LHAS.
- 1995 "The Role of the Nuclear Matrix in Gene Regulation and Cancer"
Department of Pharmacology Seminar, University of Pittsburgh Medical Center
Pittsburgh, PA
- 1995 "The Role of the Nuclear Matrix in Gene Regulation and Cancer"
Human Genetics Seminar - HUGEN 2025, University of Pittsburgh
Pittsburgh, PA
- 1995 Pittsburgh Cancer Institute Orientation
- 1995 Lectured in Department of Pharmacology Graduate Course, *Cancer Pharmacology*
- 1995 Facilitator for Medical Student course *Cancer Pharmacology*
- 1996 Pharmacology Course
Problem Based Learning Session Leader
- 1996 Lectured in Department of Pharmacology Graduate Course, *Cancer Pharmacology*
- 1996 Lectured in "From Bench to Bedside"-Frontiers in Cancer Research
University of Chicago
- 1996 Integrated Life Sciences - Neoplastic Disease Course (2/96-3/96)
- 1996 "Recent Advances in Prostate and Bladder Cancer"
Urology Grand Rounds, University of Pittsburgh Medical Center, Pittsburgh, PA
- 1997 Lectured in Graduate Biochemistry Course, West Virginia University, Department of
Biochemistry, "Nuclear Matrix and Regulation"
- 1997 Pharmacology Course
Problem Based Learning Session Leader
- 1996 UPCI, Biologic Therapy Program, Biologic Therapy and Transplantation Research
Colloquia, "Novel Approaches to Prostate and Bladder Cancer: Nuclear Matrix and
Vitamin D"
- 1997 Cancer Research, National Defense University, Industrial College of the Armed Forces,
University of Pittsburgh Cancer Institute
- 1997 Faculty, 1997 American Urological Association Annual Meeting, "Understanding Molecular
Techniques and Their Applications to Urology", New Orleans, LA
- 1997 Facilitator for Medical Student *Pharmacology Conference on Host Defenses*
- 1997 Lectured in Department of Pharmacology Graduate Course, *Cancer Pharmacology*
- 1997 Hematology/BMT Research Seminar. "Novel Approaches to Prostate and Bladder Cancer:

Nuclear Matrix and Vitamin D"

- 1997 Judge - 8th Annual Department of Pathology Research Presentations
- 1997 Cancer and Cancer Research, Visiting Nurses from Japan, University of Pittsburgh Cancer Institute
- 1997 Presented to UPCI Council Members
- 1997 "The Nuclear Matrix and Cancer"
Medical Oncology Grand Rounds, University of Pittsburgh School of Medicine Pittsburgh, PA
- 1997 "Cancer Associated Nuclear Matrix Proteins"
Pathology Research Seminar, University of Pittsburgh School of Medicine, Pittsburgh, PA
- 1997 Cancer and Cancer Research, Nursing Students, University of Pittsburgh Cancer Institute
- 1998 Pharmacology Course
Problem Based Learning Session Leader
- 1998 Facilitator for Medical Student Pharmacology Conference on Host Defenses
- 1998-Present Prostate Cancer and Cancer Metastasis Lectures of School of Medicine Graduate Course, "Cancer Biology", University of Pittsburgh School of Medicine
- 1998 Lectures of School of Medicine Course, "Tissue Structure, Growth and Function".
University of Pittsburgh School of Medicine
- 1998 Cancer Research, National Defense University, Industrial College of the Armed Forces,
University of Pittsburgh Cancer Institute
- 1998 Faculty, 1998 American Urological Association Annual Meeting, "Understanding Molecular
Techniques and Their Applications to Urology", San Diego, CA
- 1998-2000 Preceptor for Dr. Badrinath R. Konety, American Foundation for Urologic Disease and
Foundation for Strategic Bladder Research Scholar
- 1998 Lectured in the Medicine, Ethics and Society Course, School of Medicine
- 1998 Presentation on Medical Ethics to M.D., Ph.D. Students, University of Pittsburgh School of
Medicine
- 1998-Present Co-Director and Lecturer Neoplasia and Neoplastic Diseases Course, Medical Students,
University of Pittsburgh School of Medicine
- 1999 "New Marker to Detect Bladder Cancer".
Healthsouth Harnarville Rehabilitation Hospital, Rehabilitation Mini-Grand Rounds,
Harnarville, PA.
- 1999 Lectured on Prostate Biology in "Tissue Structure, Growth and Function".
University of Pittsburgh School of Medicine.

1999 Pharmacology Course
Problem Based Learning Session Leader

1999 Lectured in the Medicine Ethics and Society Course, School of Medicine

1999 Lectured in the Foundations of Biomedical Science, School of Medicine

1999 "The Role of the Nuclear Matrix in Gene Regulation and Cancer"
Pharmacology Research Seminar, University of Pittsburgh School of Medicine, Pittsburgh, PA

1999 "Cancer and Cancer Research"
Grove City College, Grove City, PA

2000 Lectured on Prostate Biology in "Tissue Structure, Growth and Function".
University of Pittsburgh School of Medicine.

2000 "Current Advances in Bladder Cancer"
Armstrong County Memorial Hospital – Tumor Board
Kittanning, PA

2000 Course Director/Integrated Life Sciences Course/Neoplasia and Neoplastic Disease – University
of Pittsburgh

2000 Pathobiology Course – Lecturer
"Nuclear Controls and Transcription Regulation in Prostate Cancer"

2000 Lectured in the Medicine Ethics and Society Course, School of Medicine

2000 Lectured in the Foundations of Biomedical Science, School of Medicine

2000 Lectured in the Medicine Ethics and Society Course, School of Medicine

2000 Course Director/Integrated Life Sciences Course/Neoplasia and Neoplastic Disease
University of Pittsburgh

2001 Lectured on Prostate Biology in "Tissue Structure, Growth and Function"
University of Pittsburgh School of Medicine

2001 Cancer Biology and Therapeutics Course - Lecturer
"Biology of Transformation: Invasion and Metastasis"
Departments of Pathology & Pharmacology – University of Pittsburgh

2001 Pathobiology Course – Lecturer
"Nuclear Controls and Transcription Regulation in Prostate Cancer"

2001 Lectured in the Foundations of Biomedical Science, School of Medicine

2001 Lectured in Human Genetics Seminar, School of Medicine
"Novel Approaches to Urologic Diseases: Cancer and BPH"

- 2001 Lectured in Integrated Life Sciences Course/Neoplasia and Neoplastic Disease – University of Pittsburgh
- 2002 Pittsburgh Development Center Seminar Series – Magee-Womens Research Institute
 “Genomic and Proteomic Approaches to Urologic Cancers and Benign Diseases – University of Pittsburgh
- 2002 Lectured in the Foundations of Biomedical Science, School of Medicine
- 2002 Lectured in Integrated Life Sciences Course/Neoplasia and Neoplastic Disease – University of Pittsburgh
- 2002 Cancer Biology and Therapeutics Course - Lecturer
 “Biology of Transformation: Invasion and Metastasis”
 Departments of Pathology & Pharmacology – University of Pittsburgh
- 2002 Lectured in the Foundations of Biomedical Science, School of Medicine
- 2002 Pathobiology Course – Lecturer
 “Nuclear Controls and Transcription Regulation in Prostate Cancer”
- 2003 Cancer Biology and Therapeutics Course - Lecturer
 “Biology of Transformation: Invasion and Metastasis”
 Departments of Pathology & Pharmacology – University of Pittsburgh
- 2003 Lectured in the Foundations of Biomedical Science, School of Medicine
- 2004 Pharmacology Seminar
 “Genomic and Proteomic Approaches to Urologic Cancers and Benign Diseases”
 Department of Pharmacology – University of Pittsburgh School of Medicine
- 2004 Cancer Biology and Therapeutics Course - Lecturer
 “Biology of Transformation: Invasion and Metastasis”
 Departments of Pathology & Pharmacology – University of Pittsburgh
- 2005 Course Director
 “Discovery and Clinical Applications of Novel Molecular Markers of Urologic Tumors”
 2005 Annual AUA Meeting
 San Antonio, TX
- 2005 Co-Director
 AUA Summer Course
 “Inflammation in Prostate Diseases”
- 2005 Topics Course - Lecturer
 “Proteomic Analysis of Nuclear Structure”
 Department of Cellular and Molecular Medicine
 The Johns Hopkins University School of Medicine

MENTORING
[pre-post-doctoral]

1994- 1995	Sponsored Directed Research (Course # Bioscience 1903) for undergraduate Jeff Butcher entitled, "Examination of Vitamin D Receptors on the Nuclear Matrix"
1995	Sponsored Directed Research (Course # Bioscience 1903) for undergraduate Tisha Nardoza entitled, "Association of Transcription Factors with the Nuclear Matrix"
1995- 1996	Training of Dr. Badrinath R. Konety, Urology Resident Laboratory Research
1996–2001	Thesis Committee, Yuting Tang Department of Biology - Donald DeFranco, Thesis Advisor
1996	Comprehensive Examination Committee, Marni Brisson Department of Pharmacology
1996	Training of Dr. Ajay K. Nangia, Urology Resident Laboratory Research
1997	Laboratory Research Rotation, Lei Zheng, Department of Pathology, Graduate Student
1996	Training of Amy Abdulovic, High School Student Intern
1997-1999	Thesis Committee, Jimin Liu Department of Biology - Donald DeFranco, Thesis Advisor
1997-1998	Thesis Committee, Jen-Tzer Gao Department of Pathology - Michael J. Becich, Thesis Advisor
1997–1998	Supervised Undergraduate Research Project of Kyle Fisher
1998-2000	Preceptor for Dr. Badrinath R. Konety, American Foundation for Urologic Disease and Foundation for Strategic Bladder Research Scholar
1998-2003	Thesis Committee, Jennifer Guerrero Department of Biology - Donald DeFranco, Thesis Advisor
1998-2000	Thesis Committee, Mark Whitmore Department of Pharmacology - Leaf Huang, Thesis Advisor
1998	Summer Internship, Amy Abdulovic Grove City College
1998	Comprehensive Examination Committee, Yadi Tan Department of Pharmacology
1998	Research Rotation, M.D., Ph.D. Program Jared Muenzer
1998-1999	Thesis Committee, Michael Gray Molecular Genetics and Biochemistry – Bo Liu, Thesis Advisor

1998-Present	Faculty Advisor, Interdisciplinary Graduate Program Eddy Leman
1999	Training of Kate Dougherty – High School Intern
1999	Research Rotation, Interdisciplinary Graduate Program – Matthew Wilson
1999	Research Rotation, Interdisciplinary Graduate Program – Andrew Lepisto
2000	Summer Internship, Amy Abdulovic Grove City College
2000	Summer Internship, Roger Bartollota
2000-2002	Training of Tracy Davido, Medical Student IV Laboratory Research
2000-2002	Training of Janey Whalen, Ph.D. Postdoctoral Fellow
2000	Research Rotation, Jared Muenzer, Medical Student IV
2000-2003	Gisela Brüenagel, M.D. Postdoctoral Fellow-Feodor Lynen Fellowship Award
2000-2001	Research Rotation, Interdisciplinary Graduate Program – Lana Hanford
2001-2005	Interdisciplinary Graduate Program /Thesis Advisor/Molecular Pharmacology Training Program Julie Myers
2001	Thesis Committee, Department of Pathology – Lei Zheng, Michael J. Becich, Thesis Advisor
1999-2003	Interdisciplinary Graduate Program/Thesis Advisor – Eddy Leman
2001	Summer Internship, Pittsburgh Tissue Engineering Initiative, Inc. – Michael Madigan
2001	Summer Undergraduate Research Program – Elizabeth Pino
2001	Summer Internship, Amy Abdulovic / Grove City College
2001-2003	Training of Uzma Shah, Ph.D. Postdoctoral Fellow
2002	Thesis Committee, Cellular and Molecular Pathology Training Program – Lei Zheng, Michael J. Becich, Thesis Advisor
2002-2003	Training of Meral Guzey, Ph.D. Postdoctoral Fellow
2002 - 2003	Summer Internship – Kristin Stolarczyk / Penn State University

2001-2002	Research Rotation, Interdisciplinary Graduate Program – Marie Aquilano
2002	Summer Internship – Michael Madigan
2002	Thesis Committee, Cellular and Molecular Pathology Training Program - Jeffrey Chou
2002	Thesis Committee, Robert H. Getzenberg, Thesis Advisor Cellular and Molecular Pathology Training Program, Eddy Leman
2002	Summer Research Undergraduate Program – Henry Richard Johnston, IV Research Rotation, Interdisciplinary Graduate Program
2002	Summer Undergraduate Research Program – Matthew Germinaro Research Rotation, Interdisciplinary Graduate Program
2002	Summer Undergraduate Research Program – Elizabeth Pino Research Rotation, Interdisciplinary Graduate Program
2002	Summer Graduate Research Program/Academic Advisor – Peter McDonald Research Rotation, Interdisciplinary Graduate Program
2002-2003	Research Rotation, Interdisciplinary Graduate Program – Sheila Roberts
2003- Present	Thesis Committee Cellular and Molecular Pathology Training Program Katherine Bright
2003-2005	Training of Manimalha Balasubramani, Ph.D. Postdoctoral Fellow
2003- 2005	Thesis Committee – Sourabh Kharait Cellular and Molecular Pathology Training Program - Alan Wells, Thesis Advisor
2003	Summer Research Undergraduate Program – Alison Atwood Research Rotation, Interdisciplinary Graduate Program
2003	Summer Research Undergraduate Program – Miranda Sarachine Research Rotation, Interdisciplinary Graduate Program
2003	Research Rotation, Interdisciplinary Graduate Program – Jason D’Antonio
2003-2004	Training of Joseph Chen, Medical Student Laboratory Research
2003	Medical Student Research Rotation, Mark Perlmutter
2003 - 2005	Thesis Committee Cellular and Molecular Pathology Training Program – Siva Raja

2003	Comprehensive Examination Committee/GSR Department of Environmental and Occupational Health - Cathy Thomas
2002-2003	Preceptor for Dr. Uzma Shah, American Foundation for Urologic Disease and Research Scholar
2003 - 2004	Training of Cynthia Hoffman, PharmD. Research Associate
2004	Urology Residency Training – Research Rotation Benjamin Davies, M.D.
2004 - 2005	Thesis Committee - Amanda Boehm Cellular and Molecular Pathology Training Program - Janey Whalen, Thesis Advisor
2004 - 2005	Thesis Committee – Pamela L. Beatty Immunology Training Program - Olja Finn, Thesis Advisor
2004 - 2005	Thesis Committee – Jason D’Antonio Cellular and Molecular Pathology Training Program – Beth Pflug, Thesis Advisor
2004	Research Rotation, Grant Cannon
2004	Summer Research Undergraduate Program – Robin Cline Research Rotation, Interdisciplinary Graduate Program
2004	Summer Research Undergraduate Program – Ellen Leffler Research Rotation, Interdisciplinary Graduate Program
2004	Urology Residency Training – Research Rotation Glenn Cannon, M.D.
2004	Thesis Committee – Greg Gan Molecular Pharmacology Program – Ferruccio Galbiati Thesis Advisor
2004	Research Rotation, Interdisciplinary Biomedical Graduate Program – Martha Milton
2006	Research Rotation, Cellular & Molecular Medicine – Michelle Jones
2006	Thesis Committee – Katherine D’Antonio
2006	Thesis Committee – Michelle Jones Cellular and Molecular Medicine Training Program

EDITORIAL/ORGANIZATIONAL ACTIVITIES

Year

1992 – 1994	Donald S. Coffey Lectureship Committee Society for Basic Urologic Research
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1996	Editor, "Cell Structure and Signaling" Advances in Molecular and Cellular Biology, JAI Press, Greenwich, CT
1997	Ad-hoc Member, Cell Biology Study Section American Cancer Society
1997	Member, Study Section – Special Emphasis Panel in Urology, NIDDKD, DRG, National Institutes of Health
1997	Special Emphasis Panel Program Project Review Committee, "Bone Cell Structure and Gene Expression", NIAMS, National Institutes of Health
1997 – Present	Member, Education Committee American Association for Cancer Research
1998 - Present	Cell Biology Study Section, USAMRMC (DOD) Prostate Cancer Research Program
1998	Member, Study Section – Special Emphasis Panel – Urology Research Centers, NIDDKD, DRG, National Institutes of Health
1998 – 2003	Member, Society for Basic Urologic Research Symposium Organizing Committee
1998 – 2005	Editorial Board, Urologic Oncology Survey Section Urologic Oncology
1998	Co-Chairperson, Poster Discussion Session, "Molecular Markers for Cancer Susceptibility" American Association for Cancer Research 1998 Annual Meeting
1998 – 2000	Ad-Hoc Member, Executive Board Society for Basic Urologic Research
1998 – 1999	Member, Planning Committee NCI Prostate Cancer Symposium
1998 – Present	Member, Prostate Research Review Committee Veterans Health Administration
1999	Member, Research Enhancement Award Program Review Committee Veterans Health Administration
1999 – 2003	Treasurer Society for Basic Urologic Research
1999 – 2003	Member, Peer Review Committee on Cell Structure and Metastasis. American Cancer Society
1999 - 2000	Ad-Hoc Member, NIH, National Institutes of Health, Metabolic Pathology Study Section
2000 - 2004	Ad-Hoc Member, NCI, National Cancer Institute, PO1 Review Committee

2000 - Present	Member, Editorial Board, The Prostate
2001 – 2004	Member, Metabolic Pathology Study Section – Oncological Sciences Integrated Review Group – Center for Scientific Review
2001	Co-Director - FASEB Summer Research Conference “Nuclear Structure and Cancer” Saxtons River, Vermont
2001	Section Chair/NCI, National Cancer Institute, Kidney/Bladder Cancers Progress Review Group Chantilly, Virginia
2001	Co-Director, AACR Conference: New Discoveries in Prostate Cancer Naples, FL
2001 - Present	Editor – Basic Science Section Gold Journal - <i>UROLOGY</i>
2002 - 2007	Director, Prouts Neck Prostate Cancer Meetings
2002 - Present	Chair – Steering Committee of the MTOPS Biomarker Consortium
2003	Co-Chair – Discussion Session – AUA Annual Meeting “Beyond PSA: Molecular Fingerprints of Prostate Disease” Chicago, IL.
2003- 2005	Survey Editor – Urologic Oncology
2003	P01 Review Panel – 1 P01 CA86871-01A1 Chapel Hill, NC.
2003	P01 Review Panel – 1 P01 CA093900-01A2 Teleconference
2003	Cancer Center Review Panel – Site Visit Irving Cancer Center, Columbia University
2003	EDRN Review Panel – Site Visit University of Texas-M.D. Anderson Cancer Center 1U01CA085078-01 – Bogdan Czerniak, M.D., Ph.D.
2003	P01 Review Panel – 2 P01 CA077739-06A1 Teleconference
2003	Board Member – Gene Therapy and Molecular Biology
2004	P01 Review Panel – 1 P01 CA10406-01A1 Teleconference
2004	P01 Review Panel – 1 P01 CA108964-01 UT M.D. Anderson Cancer Center, Houston, TX

2004	Member Organizing Committee – International Conference on GU Cancer Research University of Iowa, Iowa City, IA
2004 – 2008	Board Member – American Foundation for Urologic Diseases (AFUD)
2004	Faculty Member – F1000 Medicine – “Genitourinary System” Section
2004	Member – Publications/Technology Committee AFUD
2004	Editorial Board – British Journal of Urology International Section of Investigative Urology
2004	Society of Basic Urologic Research [SBUR] Chair- NIH Operations Committee
2004 – 2008	Member, National Cancer Institute Subcommittee C (Basic and Preclinical) NCI Initial Review Group
2005	Session Chair - FASEB Summer Research Conference “Nuclear Structure and Cancer” Saxtons River, Vermont
2005	Society for Basic Urologic Research (SBUR) Vice President
2005	Editorial Board – Journal of Cellular Biochemistry Associate Editor
2005 – Present	Editorial Board – Asian Journal of Andrology
2006	Society for Basic Urologic Research (SBUR) President
2006 – 2010	Specialty Society Editor, <i>The Journal of Urology</i> , representing the Society of Basic Urologic Research
2007	Member, Oncology Search Committee The Johns Hopkins University School of Medicine
2007	Member, International Advisory Board of the International Journal of Urology

ORGANIZATIONAL ACTIVITIES

University and Medical School

1990	Student Representative – Search Committee for Selection of the Dean,
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Johns Hopkins University School of Medicine

1990 – 1991	Member, Rutgers Alumni Association Board of Directors
1994	Presentation to Wilkinsburg Kiwanis Club on PCI and Prostate Cancer
1995 – 2000	Editorial Board, UPCI Clinical News
1995 – 1996	Member, UPCI Internet Committee
1996	Presentation to Parkway West Rotary Club on UPCI and Prostate Cancer
1997 – 2002	Member, UPCI Annual Scientific Retreat Committee
1997 – 2004	Chair, PUCC Search Committee
1997 – 2004	Chair, PUCC Pilot Projects Program
1997 – 2004	Member, Molecular Oncology, UPCI Search Committee
1997 – 2004	Member, Urologic Oncology Search Committee
1998 – 1999	Co-Chair, Recruitment Committee The Integrated Program in Biomedical Sciences University of Pittsburgh School of Medicine
1998	Presentation to USTOO Prostate Cancer Support Group Allegheny General Hospital
1998 – 1999	Member - UPCI Information Systems Steering Committee
1999	Presentation to Men's Club, Temple Ohav Shalom on UPCI and Prostate Cancer
1999	Presentation to USTOO Prostate Cancer Support Group at UPMC
1999	Presentation to Kidney Cancer Association, Pittsburgh, PA
1999-2000	Chair, Recruitment Committee The Integrated Program in Biomedical Sciences, University of Pittsburgh School of Medicine
2000 – 2004	Member – Competitive Medical Research Fund (CMRF) Review Committee
2000 – 2004	Entrepreneurial Oversight Committee University of Pittsburgh School of Medicine
2000 – 2004	Member – UPMC Shadyside Radiation Safety Committee
2001	Presentation to UPCI Scientific Advisory Council Meeting
2002 - 2004	Member – University of Pittsburgh Technology Transfer Committee

2002 – 2004	Member – Recruitment Committee The Integrated Program in Biomedical Sciences
2003-2004	Chair, Recruitment Committee The Integrated Program in Biomedical Sciences, University of Pittsburgh School of Medicine
2003	Foundations Course Advisory Committee/University of Pittsburgh
2003	Presentation to UPCI Scientific Advisory Council Meeting
2003	Member – Department of Urology Promotions Committee
2004	Member – Graduate Student Honor Council in the School

RECOGNITION/HONORS AND AWARDS

<i>Year</i>	<i>Title of Award</i>
1983 – 1987	Caspar Nannes Memorial Scholarship Rutgers Club of Washington
1987	Henry Rutgers Honor Scholar Rutgers College
1987	Cap and Skull Honor Society, High Skull Rutgers College
1987	High Honors in Microbiology Rutgers College
1989	First Prize, Research, NCI National Meeting on Prostate Cancer, Prouts Neck, Maine
1992 – 1994	Swabius Cancer Research Award Yale University School of Medicine
1993	American Association for Cancer Research Travel Award Special Conference on Oncogenes and Antioncogenes
1993	Travel Award – Society for Basic Urologic Research Fall Symposium
1995 – 1997	Shannon Award – National Cancer Institute, National Institutes of Health
1996	National Kidney Cancer Association Young Investigator
1997	Honors Convocation – University of Pittsburgh

1998	Society for Basic Urologic Research/Merck Young Investigator Award
1999	Pittsburgh Magazine, "40 under 40" Award
1999	Presenter, American Cancer Society's 41 st Science Writers Seminar
2000	Honors Convocation – University of Pittsburgh
2000	Chancellors Research Award – University of Pittsburgh

Scientific Meetings/Invited Seminars

- 1990 "Tissue Specificity of the Nuclear Matrix in Hormone Action"
Annual Meeting of the American Society for Cell Biology, San Diego, CA.
- 1991 "Interaction of Tissue Specific Genes with Tissue Specific Nuclear Matrix Proteins in Rat Sex Accessory Tissues"
Annual Meeting of the American Society for Cell Biology, Boston, MA.
- 1992 "Nuclear Matrix Alterations Associated with Prostate Cancer in the Dunning Model"
American Urological Association Annual Meeting, Washington, DC.
- 1992 "Characterization of the Tissue Matrix Components of the Normal Prostate and Benign Prostatic Hyperplasia in the Beagle"
American Urological Association Annual Meeting, Washington, DC.
- 1992 "Tissue Specific DNA Organization and the Nuclear Matrix: Normal and Cancer Cells"
National Institutes of Health, Bethesda, MD.
- 1993 Gordon Conference on Biological Structure and Gene Expression
Volterra, Italy
- 1994 FASEB Conference – Molecular Genetic Basis of Cell and Tissue Structure and Function
Copper Mountain, CO
- 1995 "Characterization of Prostate Cancer Associated Nuclear Matrix Alterations"
American Urological Association Annual Meeting, Las Vegas, NV
- 1995 "The Role of the Nuclear Matrix in Prostate Cancer"
Society for Basic Urologic Research – 5th Annual Fall Symposium, Chapel Hill, NC
- 1995 "Recent Studies in Cancer Associated NMPs: Rat Prostate and Human Bladder"
Matritech, Inc., Cambridge, MA
- 1996 "Prostate and Bladder Cancer Associated Nuclear Matrix Proteins"
Hematology/Oncology Research Seminar, University of Michigan School of Medicine
- 1996 Prostate Cancer Prevention Workshop: Investigational Approaches and Opportunities for

- Preventing Prostate Cancer, National Cancer Institute, Annapolis, MD.
- 1996 "Characterization of Prostate and Bladder Cancer Associated Nuclear Matrix Proteins" Nuclear Structure-Gene Expression Interrelationships, Cambridge Symposia, Bolton Valley, VT
- 1996 "Prostate and Bladder Cancer Associated Nuclear Matrix Proteins"
The University of Chicago, Chicago, IL
- 1996 "Nuclear Matrix Organization" Faculty, American Urological Association 1996 Research Conference, "Advances in Cell Biology", Houston, TX.
- 1996 "The Nuclear Matrix and its Role in Cancer"
Visiting Speakers in Cancer, Case Western Reserve University, Cleveland, OH
- 1996 "Novel Approaches to Prostate Cancer: Nuclear Matrix and Vitamin D"
Prostate Cancer Program, Eli Lilly & Co., Indianapolis, IN
- 1996 "The Nuclear Matrix and Cancer"
Behring Diagnostics Inc., San Jose, CA
- 1997 "The Nuclear Matrix and its Role in Cancer"
Department of Biochemistry, West Virginia University
- 1997 "Novel Approaches to Prostate and Bladder Cancer: Nuclear Matrix and Vitamin D"
GU Oncology Conference, University of Michigan, Ann Arbor, MI
- 1997 "Nuclear Protein Matrix"
National Kidney Cancer Association Scientific Conference, Short Hills, NJ
- 1997 International Workshop on Diagnostic and Prognostic Markers in Bladder Cancer,
Barcelona, Spain
- 1997 Judge-Third Annual Oakland Scientific Conference, Pittsburgh, PA
- 1997 "The Nuclear Matrix and Cancer"
Bard Diagnostic Sciences, Inc., Redmond, WA
- 1997 Animal Models of Prostate Cancer – International Commission on Urological Diseases
Purdue University, West Lafayette, IN
- 1998 "Nuclear Matrix Proteins"
Bladder Cancer: New Concepts in Biology and Therapy, Sarasota, FL
- 1998 "Analysis of Demeter Peptide D2A21"
Pacific West Cancer Foundation, Maui, HI
- 1998 "Cancer and Cancer Research"
Seton Hill College, Greensburg, PA
- 1998 "The Nuclear Matrix and Cancer"
Ortho-Clinical Diagnostics, Raritan, NJ

- 1998 "Cancer Associated Nuclear Matrix Proteins"
Keystone Symposia, The Nuclear Matrix: Involvement in Genomic Organization, Function and Cellular Regulation, Copper Mountain, CO
- 1998 "The Nuclear Matrix and Cancer"
Bristol-Myers Squibb Oncology, Princeton, NJ
- 1998 Kidney Cancer Futures Forum
National Kidney Cancer Association, Chicago, IL
- 1998 "Approaches to Prostate and Bladder Cancer: Nuclear Matrix and Vitamin D"
Johnson, Tweardy, Grandis, Steinman Laboratory Group
- 1998 "Nuclear matrix Proteins and Cancer Diagnosis"
Ortho-Clinical Diagnostics, Rochester, NY
- 1998 "Approaches to Prostate and Bladder Cancer: Nuclear Matrix and Vitamin D"
Life Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA
- 1998 "Approaches to Prostate and Bladder Cancer: Nuclear Matrix and Vitamin D"
Department of Urology, Northwestern University School of Medicine, Chicago, IL
- 1997 Second International Workshop on Diagnostic and Prognostic Markers in Bladder Cancer,
Barcelona, Spain
- 1998 "The Effects of Vitamin D on Prostatic Growth and Neoplasia" and
"The Nuclear Matrix and Cancer"
Visiting Professorship, Department of Urology,
University of Iowa, Iowa City, IA
- 1998 "Utilization of the Bladder Cancer Specific Nuclear Matrix Protein, BLCA-4, for the
Detection of Bladder Cancer" Society for Basic Urologic Research Fall Symposium,
Prouts Neck, ME
- 1998 "Effects of Vitamin D on Prostate Development and Neoplasia"
New Research Approaches in the Prevention and Cure of Prostate Cancer, American
Association for Cancer Research Special Conference in Cancer Research, Palm Springs, CA
- 1999 "Approaches to Prostate and Bladder Cancer: Nuclear Matrix and Vitamin D" Oncology Center,
Grand Rounds, University of Wisconsin, Madison, WI
- 1999 Chair, Think-Tank Workshop on Prostate Cancer
Pittsburgh, PA
- 1999 "The Nuclear Matrix and its Role in Cancer"
Joint Graduate Program, University of Minnesota, Minneapolis, MN
- 1999 "Cancer Associated Nuclear Matrix Proteins"
Department of Biology, SUNY at Buffalo, Buffalo, NY

- 1999 "Nuclear Matrix Proteins as Markers of Cancer"
Tumor Marker Conference, Santa Barbara, California
- 1999 "Nuclear Matrix and Cancer"
Igen International, Inc., Gaithersburg, MD
- 1999 "Nuclear Matrix and Cancer"
DiaDexus, San Jose, California
- 1999 "Prostate Cancer"
UPMC Health News Broadcast –WQED 13
Pittsburgh, PA
- 1999 "The Future of Prostate Cancer: Research Horizons"
A Symposium on Prostate Cancer
NAACP – Pittsburgh, PA
- 1999 Panelist, National Cancer Institute
"Strategies for Developing New Clinical Trials for Prostate Cancer Chemoprevention"
Baltimore, MD
- 1999 "Nuclear Matrix Proteins as Biomarkers of Prostate Cancer"
NCI Prouts Neck Prostate Cancer Symposium
Prouts Neck, ME
- 1999 "Nuclear Matrix Proteins as Biomarkers of Cancer"
Bayer Diagnostics, Tarrytown, N.Y.
- 1999 "Effects of Vitamin D on Prostate Growth, Differentiation and Neoplasia"
3rd World Congress on Urological Research
Paris, France
- 1999 "Efficacy of a Synthetic Lytic Peptide in the Treatment of Prostate Cancer"
Joint Annual Meeting New England and Northeastern Sections of the
American Urological Association
Bermuda
- 1999 Visiting Professor – Department of Urology
University of Medicine & Dentistry of N.J.
New Brunswick, NJ
- 2000 "Diagnostics/Markers/Surrogate/Endpoints"
State of the Science Workshop on Superficial Bladder Cancer
Bethesda, MD
- 2000 "Nuclear Matrix Proteins as Biomarkers of Cancer"
Special Lecturer, Department of Urology
Kyoto University, Graduate School of Medicine
Kyoto, Japan
- 2000 "Efficacy of a Synthetic Lytic Peptide in the Treatment of Prostate Cancer"

- Annual Meeting American Urological Association
Atlanta, Georgia
- 2000 "Utilization of a Urine Based Assay for BLCA-4 in the Detection of Bladder Cancer"
Annual Meeting American Urological Association
Atlanta, Georgia
- 2000 "Novel Nuclear Matrix Proteins as Urinary Biomarkers"
Interstitial Cystitis Meeting
Minneapolis, MN
- 2000 Joint Intergroup Specimen Banking Committee Meeting
Chantilly, VA
- 2000 Breakout Session Chair, SOTS Workshop on Superficial Bladder Cancer
Bethesda, MD
- 2000 "The Novel Marker BLCA-4 for the Detection of Bladder Cancer"
Nordic Urology Association Meeting
Stockholm, Sweden
- 2000 Workshop on the "Mechanisms of Tumor Metastasis to the Bone: Challenges
and Opportunities"
Bethesda, MD
- 2001 "Utilization of a Urine Based Assay for BLCA-4 in the Detection of Bladder Cancer"
2nd Tumor Markers Conference
Santa Barbara, CA
- 2001 "Utilization of a Urine Based Assay for BLCA-4 in the Detection of Bladder Cancer"
3rd Annual GU Conference
Nemacolin Woodlands / Farmington, PA
- 2001 "Novel Findings in Cancer Diagnosis and Treatment"
Pacific West Cancer Foundation/NCC
Miami, FL / Nassau
- 2001 "Utilization of a Urine Based Assay for BLCA-4 in the Detection of Bladder Cancer"
European 14th IFCC Congress EUROMEDLAB 2001
Prague, Czech Republic
- 2001 "Approaches of Prostate and Bladder Cancer: Nuclear Structure and Vitamin D"
UroGenesys, Inc. Santa Monica, CA
- 2001 "Novel Technological Applications to Urologic Research"
14th Annual Spring Meeting – Society for Basic Urological Research
Anaheim, CA
- 2001 "Molecular Differentiation of Histologic and Symptomatic BPH"
Annual Meeting American Urological Association
Anaheim, CA

- 2001 "A Novel Highly Specific and Sensitive Urine-Based Assay for the Detection of Bladder Cancer"
Presentation-Eichrom
Anaheim, CA
- 2001 "Utilization of a Urine Based Assay for BLCA-4 in the Detection of Bladder Cancer"
AACCC/SCSC 2001-Annual Meeting & Clinical Lab Expo
Chicago, IL
- 2001 "Nuclear Matrix Proteins as Cancer Biomarkers"
FASEB Summer Research Conference
Saxtons River, Vermont
- 2001 "Approaches to Prostate and Bladder Cancer: Novel Tumor Biomarkers and Vitamin D".
Millennium Pharmaceuticals, Cambridge, Massachusetts
- 2001 "Men's Health Issues in Basic Urologic Research"
Society for Basic Urologic Research/European Society of Urologic Research Symposium
4th World Congress in Urologic Research
Tuscon, Arizona
- 2001 "New Discoveries in Prostate Cancer Biology and Treatment"
AACR/Special Conference in Cancer Research
Naples, Florida
- 2001 "A Novel Highly Specific and Sensitive Urine-Based Assay
for the Detection of Bladder Cancer"
Second Annual EDNR Scientific Workshop
Seattle, Washington
- 2002 "A Novel Highly Specific and Sensitive Urine-Based Assay for the Detection of Bladder Cancer"
XVIIth Congress of the European Association of Urology
Birmingham, England
- 2002 "Molecular Imaging in Cancer: Linking"
AACR Special Conference in Cancer Research
Lake Buena Vista, Florida
- 2002 "Nuclear Matrix Proteins as Cancer Biomarkers"
Georgetown University Medical Center/Department of Cell Biology
Washington, DC
- 2002 GU SPORE Bladder Cancer Intergroup Meeting
Houston, TX
- 2002 NCI-Bladder and Kidney Progress Review Program (PRG) – Session Leader
- 2002 "A Highly Specific and Sensitive Urine-based Assay for the Detection of Bladder Cancer"
AACCC/34th Annual Oak Ridge Conference /Cancer Detection and Monitoring
La Jolla, California

- 2002 "Bladder Cancer Diagnostics Expert Consultants Panel"
Geron Corporation
Menlo Park, California
- 2002 "Nuclear Matrix Proteins – Clinical Use in Bladder Cancer"
ESUR/3rd International Conference on Prostate Cancer Research
Trento, Italy
- 2002 "Prostate Cancer – Early Detection"
RUSSELL/The Club at Nevillewood
Nevillewood, PA
- 2002 "Nuclear Matrix Proteins as Cancer Biomarkers"
Department of Epidemiology – University of Pittsburgh
Pittsburgh, PA
- 2002 "Genomic and Proteomic Approaches To Urologic Cancers and Benign Diseases"
Pittsburgh Development Center Seminar Series – University of Pittsburgh
Pittsburgh, PA
- 2002 Head & Neck Cancer Research Seminar
Eye & Ear Boardroom / University of Pittsburgh
Pittsburgh, PA
- 2003 "Molecular Biology and Diagnosis of Bladder Cancer"
3rd Winter Urological Symposium
Špindlerův Mlýn
- 2003 "Nuclear Matrix Proteins as Cancer Biomarkers"
The University of Texas/MD Anderson Cancer Center
Houston, Texas
- 2003 "Utilization of Nuclear Structure to Develop Tumor Markers"
Nuclear Structure and Cancer
FASEB Summer Research Conference
Saxtons River, Vermont
- 2003 "Beyond PSA: Molecular Fingerprints of Prostate Disease"
AUA/Annual Meeting
Chicago, IL
- 2003 "Identification of Novel Tumor Markers by Proteomic Analysis of Nuclear Structure"
Womens Cancer Research Seminar Series – Magee Womens Hospital
Pittsburgh, PA
- 2003 "Identification of Novel Tumor Markers by Proteomic Analysis of Nuclear Structure"
PLCO/NLST Steering Committee Meeting
Santa Monica, CA
- 2003 "Nuclear Matrix Proteins as Bladder Cancer Biomarkers"
International Bladder Symposium

Arlington, VA

- 2003 Takeda Genome Urology 2003
"Proteomics"
Kyoto Takaragaike Prince Hotel
Kyoto, Japan
- 2003 "Deciphering the Molecular Signature of BPH"
AUA/SBUR Summer Research Conference
Houston, TX
- 2003 "Identification of Novel Tumor Markers by Proteomic Analysis of Nuclear Structure"
TriPath Oncology, Raleigh Durham, NC
- 2003 "Identification of Novel Tumor Markers by Proteomic Analysis of Nuclear Structure"
Department of Urology Grand Rounds – University of Pittsburgh
- 2004 "Identification of Novel Tumor Markers by Proteomic Analysis of Nuclear Structure"
Department of Urology – Department of Urology Grand Rounds, UT Southwestern, Dallas, TX
- 2004 "Proteomic Analysis of Nuclear Structure – Clinical Use in Bladder and Prostate Cancer?"
Department of Urology – Department of Urology Grand Rounds, Baylor College of Medicine, Houston, TX
- 2004 "Proteomic Analysis of Nuclear Structure – Clinical Use in Bladder Cancer"
Genitourinary Malignancies: Translating Laboratory Discoveries into Clinical Realities
GU Oncology Conference – University of Iowa
Iowa City, Iowa
- 2004 "Utilizing Novel Proteomic and Genomic Approaches to the Diagnosis and Prognosis of Prostate Cancer"
NAACP Pittsburgh Branch
6th Annual Father's Day FIGHT against Prostate Cancer
LeMont, Pittsburgh, PA
- 2004 Prostate and Urologic Cancer Program Seminar
University of Pittsburgh Cancer Institute, Pittsburgh, PA
"Utilizing Novel Proteomic and Genomic to the Diagnosis and Prognosis of Prostatic Diseases"
- 2004 "Multimodality Approach to the Patient with High-Risk Prostate Cancer"
TAP Pharmaceutical/CME Program
Pittsburgh, PA
- 2004 Chair
Late Stage Prostate Cancer a Multidisciplinary Approach
10th Prostate Cancer Meeting
Prostate Cancer, Maine
- 2005 Chair
Advances in Biomarkers for Prostate Disease
Paris, FRANCE
- 2005 "Discovery of Biomarkers of Urological Diseases: Proteomics, Genomics and Epigenomic Approaches"

- 15th Annual SBUR Meeting
San Antonio, TX
- 2005 “The Utilization of Novel Biomarkers for Prostate and Bladder Cancers in the Early Diagnosis of the Diseases”
ACI Oncology Meeting
Las Vegas, NV
- 2005 Session Chair and Speaker – Diagnostic Biomarkers
Novel Prostate Cancer Biomarkers Identified by Proteomic Analysis of Nuclear Structure
Prostate Cancer Foundation Twelfth Annual Scientific Retreat
Scottsdale, Arizona
- 2006 Chair
“Emerging Strategies in Prostate Cancer Therapy”
11th Prouts Neck Prostate Cancer Meeting
Prouts Neck, Maine
- 2006 The Use of Focused Proteomics to Identify Novel Biomarkers of Urologic Diseases
O’Brien Seminar – Harvard
Boston, MA
- 2006 EPCA: A new Marker for Prostate Cancer
Tumor Markers for Personalized Medicine: *The New Frontier*
The University of Texas, M. D. Anderson Cancer Center Tumor Marker Meeting
Kohala Coast, Island of Hawaii
- 2006 “Novel Prostate Cancer Biomarkers Identified by Proteomic Analysis of Nuclear Structure”
Program in prostate Cancer Research Monthly Seminar Series
Fred Hutchinson Cancer Research Center/University of Washington
Seattle, WA
- 2006 Moderator
Poster Session on *Prostate Cancer: Serum Markers*
AUA Annual Meeting
Atlanta, GA
- 2007 Lecture, University of Bonn, Bonn, Germany
- 2007 Prostate Cancer Biomarkers – the good, the bad and the mediocre
Wiesbach Lecture – University of Michigan
Ann Arbor, MI

MEMBERSHIPS in PROFESSIONAL and SCIENTIFIC SOCIETIES

<i>Year</i>	<i>Organization</i>
1988 – present	American Society for Cell Biology

1992 – present	Society for Basic Urologic Research
1993 – present	American Association for Cancer Research
1995 – present	American Urological Association – Affiliate Member
2000 – present	American Association for Clinical Chemistry – Member
2003 – present	American Foundation for Urologic Disease – Board of Directors
2007	The American Society of Clinical Oncology - Member

SCIENTIFIC REVIEWER

Cancer Research
 Journal of Cellular Biochemistry
 Journal of Urology
 Urology
 Gold Journal – *Urology*
 Urologic Oncology: Seminars and Original Investigations
 Experimental Cell Research
 Veterans Affairs Research Command
 Henry Ford Health Sciences Center
 Journal of Clinical Investigation
 Cancer Investigation
 Journal of the National Cancer Institute
 Journal of Cell Science
 The Prostate
 Urologic Oncology
 IUBMB Life
 Cancer Chemotherapy and Pharmacology
 Cancer Detection and Prevention
 Oncology
 British Journal of Urology International – *BJUI*
 Asian Journal of Andrology

Community activities

1994 - 1997	Vice-President, Franklin Ridge Community Service Association Board of Directors
1997 – 1998	President, Franklin Ridge Community Service Association Board of Directors
1998 – 1999	Secretary, Franklin Ridge Community Service Association Board of Directors